REMARKS

This is in response to the Office Action that was mailed on March 23, 2006. Applicants gratefully acknowledge the indication of allowable subject matter. Claims 1-7 are pending in this application. Claims 1-6 are amended. Support for the amendments can be found in the specification at, for example, pages 17 and 33-35.

Claim Rejections - 35 U.S.C. § 112

Claims 1-7 were rejected under 35 U.S.C. § 112, second paragraph, as failing to define the invention properly. The claims have been amended to clarify the issues raised by the Examiner in this regard.

Claim Rejections - 35 U.S.C. § 102/103

Claims 3, 6, and 7 were rejected under 35 U.S.C. § 102(e) as anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as obvious over, U.S. 2002/0034873 (Aoi). This rejection is respectfully traversed. Reconsideration and withdrawal thereof are respectfully requested.

The present invention differs from that of Aoi in that at least one of R^1-R^4 herein is derivatized (by a carbonyl halide or a protected carboxyl group). Furthermore, in the aromatic polyamine compounds involved in the present invention, at least one of R^5-R^8 is derivatized. In contrast, Aoi is completely silent about derivatizing amino groups in tetraaminobenzene.

One advantage of the present invention is that the solubility of monomer components is significantly improved by converting at least one of adamantanepolycarboxylic acid and an

aromatic polyamine into a derivative, whereby the resulting material for dielectric films has a high monomer concentration. By using such a high concentration material, film formation takes place readily, and the film thus obtained has sufficient thickness for its utility as an interlayer dielectric. See the specification, page 3, line 20 to page 4, line 4 and the Examples.

For instance, in Example 1, trimethyl ester of 1,3,5-adamantanetricarboxylic acid and 3,3'-diaminobenzidine tetracyclohexaninime are employed as monomer components. Both adamantane polycarboxylic acid and aromatic polyamine are converted into derivatives and the resulting film has a thickness of 300 nm. In contrast, the film obtained using 1,3,5-adamantanetricarboxylic acid and 3,3'-diaminobenzidine has a thickness of less than 20 nm. Other Examples provide similar results.

Moreover, the films provided by the present invention have extremely improved dielectric constants. The reason is believed to be that polycondensation reaction between an adamantane polycarboxylic acid and an aromatic polyamine proceed very sufficiently by use of a high concentration material. Consequently, there are few unreacted polar-functional groups in the resulting polymers. Thus, the dielectric constants of the films are significantly improved. For instance, as demonstrated by the Declaration under 37 CFR 1.132 of Dr. Yoshinori Funaki enclosed herewtih, the film of Example 1 had a relative dielectric constant of only 2.5, while the film of Comparative Example 1 had a significantly higher relative dielectric constant of 3.8.

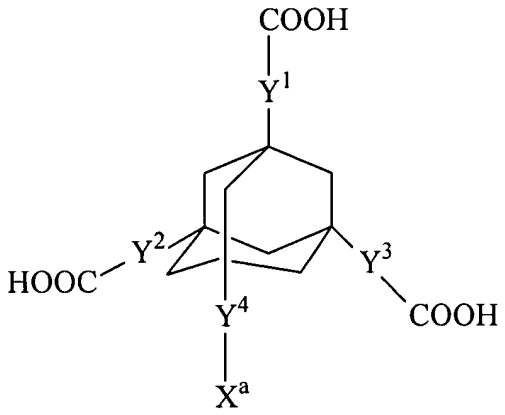
Accordingly, withdrawal of the rejection over the Aoi reference is in order and is earnestly solicited.

Double Patenting

Claims 1-7 were provisionally rejected on the ground of obviousness-type double patenting as being unpatentable over claims 1, 2, 4 and 5 of copending Application No. 10/807,326. (It was confirmed in a telephone discussion with the Examiner that "10/807,325" in the Office Action should read "10/807,326.") The rejection is respectfully traversed.

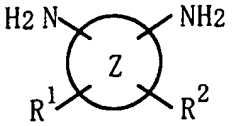
Applicants respectfully submit that claims 1-7 of the instant application do not define an invention that is merely an obvious variation of an invention claimed in the '326 application. Claim 1 of the '326 application reads as follows:

> 1. A material for dielectric films, which is a polymerizable composition comprising: an adamantanepolycarboxylic acid represented by following Formula (1a):



(1a)

> wherein X^a is a hydrogen atom or a hydrocarbon group; and Y^1, Y^2, Y^3 and Y^4 may be the same as or different from one another and are each a single bond or a bivalent aromatic cyclic group; an aromatic polyamine represented by following Formula (2):



(2)

> wherein Ring Z is a monocyclic or polycyclic aromatic ring; and R^1 and R^2 are each a substituent bound to Ring Z, may be the same as or different from each other and are each an amino group, a mono-substituted amino group, a hydroxyl group or a mercapto group; and a solvent other than ketones and aldehydes, wherein the

adamantanepolycarboxylic acid and the aromatic polyamine are dissolved in the solvent.

In Formula (1) of the present application, at least one of X and R^1-R^3 is derivatized (i.e., has a protecting group or halide). In contrast, the compound represented by Formula (1a) of the '326 invention is not derivatized. Similarly, the aromatic polyamine represented by Formula (2) of the present application is characterized by at least one of R^5-R^8 being protected by a protecting group. The compound represented by Formula (2) of the '326 invention does not have any protecting groups. Thus, the material for dielectric films of the present invention differs significantly from the material for dielectric films of the '326 application with respect to the structure of the monomers contained therein.

With respect to the polymer, the present claims and the claims of the '326 application are different from each other in view of the fact that the monomer components of each composition are different from each other in the same respect as mentioned above (protected versus non-protected). Furthermore by converting at least one of an adamantanepolycaroboxylic acid and an aromatic polyamine as monomer components into a derivative (protecting group or halide group), the composition (material for dielectric films) of the present application has significantly higher solubility in a solvent, which affects the number of crosslinking points in the obtained polymer. That is, each polymer of both applications has a different crosslinking structure.

Based upon the above-considerations, the claimed subject matter of the present invention and that of the '326 application are significantly and clearly different from one another. Accordingly, withdrawal of the obviousness-type double patenting rejection is respectfully requested.

Conclusion

A full and complete response has been made to all issues as cited in the Office Action. Applicants have taken substantial steps in efforts to advance prosecution of the present application. Thus, Applicants respectfully request that a timely Notice of Allowance issue for the present case.

If the Examiner believes that personal communication will expedite prosecution of this application, the Examiner is invited to contact the undersigned at the offices of Birch, Stewart, Kolasch & Birch, LLP.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§1.16 or 1.17; particularly, extension of time fees.

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Respectfully submitted,

By _____ #28,781
Gerald M. Murphy, Jr.
Registration No.: 28,977
BIRCH, STEWART, KOLASCH & BIRCH, LLP
8110 Gatehouse Road, Suite 100 East
Falls Church, Virginia 22040-0747
(703) 205-8000
Attorney for Applicant